NATURAL RESOURCES CONSERVATION SERVICE

JOBSHEET

FENCE, ELECTRIC

(feet)

CODE 382B

Prepared for: Business Name _____

Client Name _____ Owner ☐ Operator ☐

Field or Treatment Unit _____

Prepared by: Name/ Title: _____ Date _____

I. PURPOSE OF JOBSHEET

This jobsheet provides the client with the requirements for installing, operating and maintaining the practice on the specified field or treatment unit to achieve its intended purpose(s).

II. PRACTICE DEFINITION

A constructed barrier to livestock, wildlife, or people.

III. PURPOSE OF CLIENT APPLYING PRACTICE **(Including species of animal to be controlled.)**

A. Major purpose(s): _____

B. Other purpose(s) or benefits:

_____

IV. DESCRIPTION OF PLANNED FENCE (Also see attached job sketch.)

Fence Number or Name	Description of Planned Fence (type and height of fence)	Total Length (feet)

V. GENERAL MATERIAL SPECIFICATIONS (Also see attached job sketch.)

All materials used in the installation of electric fences shall have a minimum life expectancy of ten (10) years.

Electric fences will be constructed that equal or exceed the strength and durability of one built in accordance with the following specifications.

The following table lists the type of material to be used and specifications for the components of the fence(s) to be installed.

VI. GENERAL INSTALLATION SPECIFICATIONS (Also see attached job sketch.)

The fence will be installed in accordance with proper safety procedures.

The completed job shall be workmanlike and present a good appearance.

If brush or rock clearing, grading or other land work is to be done in conjunction with the fence installation, appropriate grading and erosion control measures shall be undertaken or installed. In some instances, it is advisable to also install a **Firebreak** (Code 394) and an **Access Road** (Code 560). Specifications for all measures to be installed in conjunction with the fence should be attached to the Jobsheet.

VII. SPECIFICATIONS FOR CORNER BRACES, POSTS, AND WIRE (Also see attached job sketch.)

Fence Component	Type of Material to be Used	Material and Installation Specifications
Corner Braces, Gate Posts, and Compression Members		
In-Line Braces (pull post or strainers) and Compression Members		
Wire		

VIII. SPECIFICATIONS FOR OTHER FENCE COMPONENTS

Fence Component	Type of Material to be Used	Material and Installation Specifications
Fasteners		
Stays		
Insulators		
Generators		

IX. GROUNDING REQUIREMENTS

- Assuming that an electric fence has been properly wired and that an adequate energizer has been installed, 90% of all electric fence failures are due to improper or insufficient grounding.
- Adequate grounding calls for driving the equivalent of 22.95 feet (7 meters) of approved ground rod or new galvanized ¾" pipe into the soil near the energizer. Four 6-foot lengths of rod or pipe driven 5½ feet deep, spaced six feet (6') apart and connected to a continuous ground wire from the energizer to each rod or pipe.
- Ground rods must be driven into the ground near the one-piece ground jumper wires in the fence line every 1,500 feet for dry areas, 3,000 feet for wet areas, at fence ends, corners, and on both sides of a gate.
- A lightning arrester will be placed near the energizer between the energizer and the fence. However, the grounding rods for the lightening arrester must be at least 40 feet from the grounding rods for the energizer. Three lightening arresters will be installed on each fence.

X. SAFETY REQUIREMENTS

- Requirements are set forth in the latest edition of Standard 69, “Electronic Fence Controllers,” published by the Underwriters Laboratories, Inc.; and , regardless of design or manufacturer, only electric fence energizers meeting these requirements or those actually bearing the “UL Listed” labels can be used to energize power fences.
- Energizers operating to the maximum of these safety standards (UL69) greatly increase the energy on the fence line for brief periods to sufficiently control the most stubborn animals while providing an adequate margin of safety during the “off” periods to allow humans and animals to free themselves from electrified fences.
- Use only one energizer per wire at one time; however, more than one wire can be energized by one charger. Do not hook up more than one energizer on any single wire.
- It is highly recommended that a suitable voltmeter (one with an LED readout) be on-hand at all times when building, repairing, or checking an electric fence.
- Have all 110- or 220-volt supply lines for plug-in energizers installed according to local electrical code by a competent electrician.
- Install proper ground connections on power poles or buildings to protect them from lightning.
- Do not attempt to install any portion of an electric fence or to make repairs or tension adjustments with the current switched on. Disconnect the feed wires to the segment of fence on which you are working so the current cannot be accidentally switched on.
- When testing an electric fence with a voltmeter, wear rubber gloves or rubber-soled shoes to minimize any electric shock. Wearing a non-metallic hard hat is also recommended since shocks about the head can be uncomfortable for hours. Any electrical shock is intensified if your hands, feet, or clothing are wet from rain or perspiration.Warn all children that a fence is electrified and teach several responsible people how to switch off or disconnect the current to the fence in the case of an emergency.
- Affix electric fence warning signs at intervals not exceeding 200 feet on any segment of a fence that carries electrified wires.
- In areas with dry grass, reduce the output of your energizer to minimize the risk of fire.
- If you must test a fence for current without a voltmeter or test light, place the palm of one hand on the soil and slide a blade of green grass gradually forward against a live wire. A trickle of current through the grass indicates the current is on.
- Never grasp a wire on an electric fence with the closed hand. Even if you think the current is off, test a “live” wire first with the backs of your fingers. In the event of a shock, reflex will pull your fingers away from the wire.
- Keep all metallic farm implements and any livestock that are tethered with chains away from electric fences.
- Do not attempt to repair or modify any electric fence energizer yourself. Return it to an authorized dealer for service.
- Wear tightly woven, tough clothing that will not catch on the ends of the wire.
- Wear heavy duty, gauntlet-type leather gloves that fit snugly.
- Wear long pants and high work shoes/boots with heavy soles to protect the feet and legs.
- Wear safety goggles or eye shields when cutting or tensioning the wire as well as when driving nails or staples.

X. SAFETY REQUIREMENTS (continued)

- Use proper shields and wear a non-metallic hard hat and ear protection when using power equipment.
- Use driving caps on posts as recommended by the post driver manufacturer.
- Keep children and livestock away from all fencing operations.
- Wear face shields and rubber gloves when working with chemically-treated wood posts or lumber. Some people are allergic to wood-preserving chemicals.
- Never use unsafe short-cuts or eliminate such items as safety wires on twitch sticks.
- Pick up all cut ends of wire, dropped staples and nails, etc., so they cannot cause injury to people, eaten by livestock, or damage mower blades.
- Suspend all fence construction or maintenance and keep away for all fences during electrical storms.
- Install proper ground wires to wire fences as soon as they are built.
- Remember, any wire or metal post is an excellent conductor of electricity. Be careful when stringing the guide wire or line wires so that they do not come near any overhead power lines or metal posts contact any underground cables where you are working.

XI. BASIS FOR ACCEPTANCE

After the fence has been installed, a site inspection will be made to determine if the materials and the design and installation adhered to the specifications in this Jobsheet. See the General Manual 450 Part 407, Documentation, Certification, and Spot Checking for guidance on which parameters of the fence require checking.

XII. OPERATION AND MAINTENANCE SPECIFICATIONS

Regular inspection of fences should be part of an on-going management program. Inspection of fences after storm events is needed to facilitate the function of the intended use of the fence.

Maintenance and repairs will be performed as needed to facilitate the intended purpose of the installed fence.

Some items to be observed and corrected are:

- proper voltage;
- proper and improper grounding;
- proper insulation;
- electric fence warning signs;
- holes in electric netting;
- tension of wire;
- broken wires;
- holes in woven wire,
- staples pulled out;
- missing wire clips;
- post alignment; especially corner, gate, and end posts;
- post stability, rotting wooden posts;
- bent or broken posts;
- corroding steel posts or wire;
- broken welds on steel posts;
- sagging gates;
- bent or broken stays; and
- are the requirements for the intended purpose of the fence being fulfilled by the number, size, and spacing of the components of the fence?

XIII. ADDITIONAL SPECIFICATIONS, IF ANY

XIV. JOB SKETCH

One or more job sketches that illustrate the specifications for the planned fence(s) have been prepared and attached to this Jobsheet.

The specifications in the job sketches should be adhered to and will aid in the installation of the planned fence(s).

The job sketches should include:

- type of planned fence(s);
- location;
- material specifications;
- design and installation specifications;
- north arrow, if applicable;
- scale, if applicable; and
- pertinent boundaries and farm and natural features.